

**Remarks**

The Office Action dated April 222, 2005 has been carefully reviewed and the following remarks have been made in consequence thereof.

Claims 1-26 are pending in this application. Claims 12-14 have been allowed. Claims 1, 3-11, 15-18, 20-23, and 25-26 stand rejected. Claims 2, 19 and 24 stand objected to. Claims 2 and 19 have been canceled.

The rejection of Claims 1, 3-11, 15-18, 20-23, and 25-26 under 35 U.S.C. § 102(e) as being anticipated by Slates (U.S. Patent No. 6,850,077) is respectfully traversed.

Claim 2 was indicated as being allowable if rewritten in independent form including all of the limitations of the base claim, independent Claim 1. Claim 2 has been canceled and independent Claim 1 has been rewritten to include all the limitations of Claim 2. As such, Claim 1 is submitted to be patentable over Slates.

Claims 3-11 depend directly or indirectly from independent Claim 1. When the recitations of Claims 3-11 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claims 3-11 likewise are patentable over Slates.

Claim 19 was indicated as being allowable if rewritten in independent form including all of the limitations of the base claim, independent Claim 15. Claim 19 has been canceled and independent Claim 15 has been rewritten to include all the limitations of Claim 19. As such, Claim 15 is submitted to be patentable over Slates.

Claims 16-18, 20-23, and 25 depend directly or indirectly from independent Claim 15. When the recitations of Claims 16-18, 20-23, and 25 are considered in combination with the recitations of Claim 15, Applicant submits that dependent Claims 16-18, 20-23, and 25 likewise are patentable over Slates.

Claim 24 is objected to as being dependent upon a rejected base claim. Claim 24 depends directly from independent Claim 15, which Applicant submits to be patentable over Slates. Accordingly, Claim 24 is submitted to be patentable over Slates.

Slates describes a digital eddy current proximity system including a digital impedance measuring device for digitally measuring the proximity probes impedance correlative to displacement motion and position of a metallic target object being monitored. The system further includes a cable-length calibration method, an automatic material identification and calibration method, a material insensitive method, an inductive ratio method and advanced sensing characteristics.

Claim 26 recites a system for determining a gap defined between an eddy current proximity transducer and a target, wherein the system comprises “a network that includes a transducer that is serially coupled to an electrical component...a signal generator circuit operatively coupled to the network, wherein the signal generator circuit is configured to drive a current that includes a plurality of frequency components through the network wherein a first analog voltage is impressed across the network and a second analog voltage is impressed across the transducer...a sampling and digitizing circuit coupled to the signal generator circuit, wherein the sampling and digitizing circuit is configured to convert the first analog multi-frequency voltage impressed across the network and the second analog multi-frequency voltage impressed across the transducer into a plurality of digitized voltages...a convolution circuit that includes an input terminal corresponding to at least one of the plurality of component frequencies, wherein the convolution circuit is configured to convolve each digitized voltage with a digital waveform for forming a first complex number and a second complex number correlative to the first analog voltage and the second analog voltage respectively for at least one of the component frequencies...a memory that includes a data structure with data points that are relative to a predetermined target property that includes at

least one of a target conductivity, a target material composition, a target surface treatment, and a target permeability...a processor that is configured to control execution of instructions to determine a complex impedance value of the transducer relative to a plurality of selected data structure data points...determine at least one of a target material property and the gap based on an interpolation of the plurality of selected data structure data points using linear projection.”

Slates does not describe nor suggest a system for determining a gap defined between an eddy current proximity transducer and a target as recited in Claim 26. Specifically, Slates does not describe nor suggest a memory that includes a data structure with data points that are relative to a predetermined target property that includes at least one of a target conductivity, a target material composition, a target surface treatment, and a target permeability. Accordingly, for at least the reasons set forth above, Claim 26 is submitted to be patentable over Slates.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 3-11, 15-18, 20-23, and 25-26 be withdrawn.

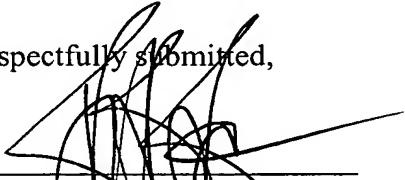
Claims 2, 19, and 24 were indicated as being allowable if rewritten in independent form including all of the limitation of the independent claim. Claims 2 and 19 have each been canceled and respective independent Claims 1 and 15 were amended to include the recitations from respective Claims 2 and 19. Accordingly, Claims 1 and 15 are submitted to be in condition for allowance. Claim 24 depends from Claim 15 and as such is also submitted to be in condition for allowance.

Claims 12-14 were indicated as allowable. With respect to the reasons for allowance, applicant believes that the Statement of Reasons for Allowance in this case is improper as reasons for allowance are only warranted in instances in which the record of the prosecution as a whole does not make clear the Examiner's reasons for allowing a claim or claims (see 37

CFR §1.104(e)). In the present case, Applicant believes the record as a whole does make the reasons for allowance clear and therefore no statement by the Examiner is necessary or warranted. Furthermore, Applicants do not necessarily agree with each statement in the reasons for allowance and do not necessarily agree with the Examiner's interpretation of the teachings of the cited art.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



Robert B. Reese III  
Registration No. 45,548  
ARMSTRONG TEASDALE LLP  
One Metropolitan Square, Suite 2600  
St. Louis, MO 63102-2740  
(314) 621-5070